



SIM900 Mainframe

- Rugged, compact design
- 8 module slots
- 9th port for remote module
- 10 MHz reference with ext. sync
- Cascade multiple mainframes
- GPIB and RS-232 interfaces
- Start-up script memory



SIM900...\$995 (U.S. List)
GPIB interface Opt. 01...Free (Introductory Offer)

SIM (Small Instrumentation Modules) is a robust, flexible platform in which up to eight high performance instruments share the same compact mainframe and computer interface. Unlike other modular systems, both front panel and computer operation are possible. With SIM you get the functionality you need while avoiding the cost of unnecessary features. You configure your own system from a broad selection of modules.

The SIM900 Mainframe is the platform on which a SIM system is assembled. The mainframe provides power, computer interfaces, clock synchronization and individual module status. Eight internal module slots accommodate single and double-width modules. For the occasional application needing a module right next to an experiment, a rear-panel connector and an interconnect cable permit operation of a 9th module outside the mainframe.

Communications

The mainframe comes with a standard RS-232 host interface and GPIB (IEEE-488) as an option. All commands and queries to individual modules are routed through the mainframe host interface. Messages are routed based on their port number, with the mainframe seamlessly relaying data to and from the appropriate destination. This messaging

system is also used to communicate through the two auxiliary RS-232 ports. Using these ports, any number of SIM900 mainframes and other RS-232 instruments may be controlled through one host interface in the master mainframe.

Each port in the mainframe has independent 511-byte input and output queues. The mainframe also performs any rate adaptation needed when communicating through the ports. A dedicated "eavesdrop" RS-232 port provides an echo of all communications to and from the mainframe to ease debugging of new setups.

Timebase

The mainframe provides a master 10 MHz clock to the modules which lock their internal timebases to this reference. The master clock in the SIM900 can be either free-running or phase-locked to an external 10 MHz reference through a rear-panel BNC input.

Start-Up Script

A 4000 byte start-up script is maintained in non-volatile memory in the SIM900. When enabled, the commands stored in the script are executed each time the mainframe is turned on. This provides a simple way to ensure all modules are automatically set to a desired starting configuration.

Front Panel

Front panel LED indicators provide status information for the mainframe and also monitor communications between the host and installed modules. Indicators display host interface, timebase, communications status, start-up script, and power information.

Power Supplies

All modules operate from various combinations of ± 5 V, ± 15 V and $+24$ V. These well regulated and filtered voltages are supplied by the mainframe

power supply, which is forced air cooled to maintain stable performance. All supplies are current limited with a trip-off circuit in case of an over voltage or short circuit.

The SIM900 is the foundation for a wide range of instrumentation in the SIM family. For more information visit our web site at www.thinkSRS.com or call us at 408-744-9040.

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SIM900 Specifications

Module slots	8	Start script	Enabled
Mainframe voltages	± 15 VDC, ± 5 VDC, $+24$ VDC	Power	On, Standby, Overload, Trip
Current limits	5 A max for $+5$ VDC 3 A max for ± 15 & $+24$ VDC	Other connections	Remote SIM DB15 connector Aux. RS-232/DTE (2 ports) Eavesdrop RS-232/DCE 10 MHz timebase input BNC DIP switch for RS-232, GPIB & script enable Chassis ground terminal
Power limit	70 W total of all voltages	Operating temperature	0 °C to 40 °C, non-condensing
Voltage regulation	± 0.5 %	Power requirements	90 to 260 VAC, 47 to 63 Hz, 150 W max
Internal timebase	10 MHz VCXO, ± 10 ppm	Dimensions	
Host interfaces	RS-232/DCE GPIB (optional)	Mainframe	17.0" W \times 5.3" H \times 9.0" D
Module connector pins, DB15 (F)		Single-width module	1.5" W \times 3.6" H \times 7.0" D
1 Signal ground	9 Chassis ground	Double-width module	3.0" W \times 3.6" H \times 7.0" D
2 -Status/service request	10 TXD async data	Weight (empty)	12.6 lbs
3 RTS flow ctrl	11 RXD async data	Rack mount	O9OORM (optional)
4 CTS flow ctrl	12 $+10$ MHz ref	Warranty	One year parts & labor against defects in workmanship and materials
5 -10 MHz ref	13 $+5$ VDC		
6 -5 VDC	14 $+15$ VDC		
7 -15 VDC	15 $+24$ VDC		
8 Power ground			
Indicator lights			
Interface	RS-232, GPIB		
Timebase	Internal/External Lock, Fault		
Activity	8 slots, Remote SIM, Aux A, Aux B, Mainframe, Data Send, Data Receive, Data Error		



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